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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,265	12/22/1999	KARL M ROBINSON	303.455US3	5953
21186	7590	02/15/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH 1600 TCF TOWER 121 SOUTH EIGHT STREET MINNEAPOLIS, MN 55402			TRAN, THIEN F	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/470,265	ROBINSON, KARL M	
	Examiner	Art Unit	
	Thien F. Tran	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,20,80,81,83,84,98-102,104-110 and 113-124 is/are pending in the application.
- 4a) Of the above claim(s) 80,83,98-102,106,113,115 and 117-124 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20,81,84,104,105,107-110,114 and 116 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 80, 83, 98-102, 106, 113, 115, 117-124 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse of species 4 in the reply filed on 06/22/2005.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19, 81, 104, 107, 108, 114 are rejected under 35 U.S.C. 102(b) as being anticipated by Suguro et al. (US 5,189,503).

Suguro et al. discloses the claimed capacitor (Fig. 7d) comprising a first conductive capacitor plate (43) of a first material; a second conductive capacitor plate (51); a dielectric structure (45, 47, 49) interposed between said first and second conductive capacitor plates, wherein said dielectric structure includes a non-oxidized portion (45) and an oxidized portion (47), wherein the oxidized portion includes a second material of tungsten oxide or titanium oxide (col. 10, lines 43-47) which comprises titanium.

Regarding claims 81 and 104, the second conductive capacitor plate (51) is formed of metal.

Regarding claim 108, the capacitor further comprises a diffusion barrier layer (45) of tungsten interposed between the first conductive capacitor plate (43) and the oxidized portion (47) of the dielectric structure.

Regarding claim 114, the capacitor further comprises a diffusion barrier layer (45) of tungsten interposed between the first conductive capacitor plate (43) and the metal layer (51).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20, 84, 105, 109, 110 and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blodgett et al. (US 5,811,990) in view of Suguro et al. (US 5,189,503).

Blodgett et al. discloses a memory system 710 (Fig. 18) comprising a monolithic memory device 705 having dynamic random access memory device containing a capacitor; and a processor 710 used to generate external control signals which access the monolithic memory device 705 (col. 14, lines 10-15). Blodgett et al. does not explicitly disclose the capacitor comprising a first conductive capacitor plate, a second conductive capacitor plate, a metal oxide layer and a metal layer overlying the first

Art Unit: 2811

conductive capacitor plate. Suguro et al. as described in details above discloses the capacitor as claimed. It would have been obvious to person having ordinary skill in the art at the time the invention was made to substitute the capacitor as taught by Suguro et al. for the capacitor in the memory system of Blodgett et al. in order to provide an improved capacitor with low current leakage. As a result, the modified Blodgett et al. provides a capacitor comprising a first conductive capacitor plate of a first material; a second conductive capacitor plate; and a dielectric structure interposed between the first and second conductive capacitor plates, wherein the dielectric structure includes a non-oxidized portion and an oxidized portion of titanium oxide which comprises titanium.

Regarding claims 84 and 105, the second conductive capacitor plate is formed of metal.

Regarding claim 110, the capacitor further comprises a diffusion barrier layer (45) of tungsten interposed between the first conductive capacitor plate (43) and the oxidized portion (47) of the dielectric structure.

Regarding claim 116, the capacitor further comprises a diffusion barrier layer (45) of tungsten interposed between the first conductive capacitor plate (43) and the metal layer (51).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

Art Unit: 2811

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tt
February 13, 2006


THIENTRAN
PRIMARY EXAMINER